



# STAR STUFF

The Newsletter of the Ford Amateur Astronomy Club

Volume 15, Number 7

July 2006

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### NOTE!

July 27 FAAC general meeting will be at a one-time, new location at HFCC: **Hackett Room, Health Career Bldg., HFCC**

## Picnic Spirits Soar!



Photo by Dale Ochalek

*Tow plane and sail plane taking off – a familiar site at Richmond Air Field*

John Connop

I was really excited, thinking about getting a ride in one of the "gliders," at the FAAC/Sandhill Soaring Club picnic, July 8, at Richmond Field. When I mentioned this to one of the soaring club members there, he quickly corrected - "sail plane" – as if I had said a bad word. OK – be advised, all...

Anyway, I signed up, and after a waiting period, returned to the reservation wagon for my "wait" status. They looked me over, and asked about my "weight" status. (Cringe) I told them, and they looked around, hemmed and hawed a bit, and finally said that I could go in the big sail plane - called "the Grob," and they would locate a small enough pilot to balance out the weight (ok, I shouldn't have had the extra cheese burger, and brownies). So now the wait was to probably be an hour longer, the cost a bit higher.

After another hour went by, the Grob was available for flight, and they had found a suitable pilot. Oren, a commercial pilot, seemed friendly, and made

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# STAR STUFF

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**FORD AMATEUR ASTRONOMY CLUB**  
P.O. Box 7527  
Dearborn MI 48121-7527

PRESIDENT:	Don Klaser
VICE PRESIDENT:	Ed Halash
SECRETARY:	Ken Anderson
TREASURER:	Gordon Hansen
NEWSLETTER EDITOR:	Dale Ochalek

## CLUB INFORMATION

The Ford Amateur Astronomy Club (FAAC) meets on the fourth Thursday each month, except for the combined November/December meeting on the first Thursday of December – at Henry Ford Community College, Administrative Services and Conference Center in Dearborn. Refer to our website for a map and directions ([www.boonhill.net/faac](http://www.boonhill.net/faac)).

The FAAC observes at Spring Mill Pond within the Island Lake State Recreation Area near Brighton, Michigan. The club maintains an after-hours permit, and observes on Friday and Saturday nights, and nights before holidays, weather permitting. The FAAC also has use of the dark skies at Richmond Airport, Unadilla, given prior permission. See the FAAC Yahoo Group\* for more information.

Observing schedules and additional information are available on our website, or via the FAAC Yahoo Group.\*

Membership in the FAAC is open to anyone with an interest in amateur astronomy. The FAAC is an affiliate of the Ford Employees Recreation Association (F.E.R.A.). Membership fees:

Annual – New Member:	\$30	(\$15 after July 1)
Annual – Renewal:	\$25	(\$30 after January 31)
Life Membership:	\$150	

Membership includes the *STAR STUFF* newsletter, discounts on magazines, discounts at selected area equipment retailers, and after-hours access to the Island Lake observing site.

## ASTRONOMY or SKY & TELESCOPE MAGAZINE DISCOUNTS

Obtain the required form from the FAAC club treasurer for a \$10 discount. Send the completed form directly to the respective publisher with your subscription request and payment. Do not send any money directly to the FAAC for this.

## STAR STUFF NEWSLETTER SUBMISSIONS

Your submissions to *STAR STUFF* are more than welcome! Send your story and/or images to the editor at [dake00k@yahoo.com](mailto:dake00k@yahoo.com). Email text or MS Word is fine. *STAR STUFF* will usually go to press the weekend prior to each general meeting. Submissions received prior to that weekend can be included in that issue.

\* FAAC Members are welcome to join our **FordAstronomyClub** Yahoo! Group. Messages, photos, files, online discussions, and more! URL: [groups.yahoo.com/group/FordAstronomyClub](http://groups.yahoo.com/group/FordAstronomyClub)

## Hot Fun in the Summertime II

### President's Corner

Don Klaser, President, FAAC

What a great day for a picnic, July 8, at Richmond Field! Jan and I got there shortly after 3:00 p.m. and joined the crowd of SEMSA members, general public and FAAC members already enjoying the day. We set up our scopes for solar viewing on the south side of the club house so everyone might have an opportunity to see the sun in either white light or H-alpha.

At 5:00 pm, the grill was ready to go, and dinner was served. The assortment of cold salads, veggie and fruit trays and dessert goodies was outstanding! Also, the interaction between SEMSA and FAAC members was good to see. Several FAAC members took to the skies in the gliders (sail-planes), as SEMSA was offering rides.

As evening approached, we moved our scopes out to our regular location to prepare for a night of viewing after the fireworks show. And what a show! It continued for almost a half hour, with a constant display of bright (and loud) explosions. After the show, we turned our scopes to the sky, only to find that clouds had rolled in with just a few holes to view bright objects like the Moon and Jupiter. Even so, a number of groups came out to have a look and enjoy the sky. I look forward to this month's meeting to hear the comments from other members who attended this fun event.

Through the diligent efforts of FAAC members, our entry in the Astronomy Magazine "Out of the World" Outreach Award Program was finished and submitted. Dale Ochalek and John Schroer worked out the entry essays. Also, kudos to Gordon Hansen's daughter, Alison, an avid scrapbooker, for putting all of the content and pictures gathered from several members, into an original presentation for us. Gordon scanned the entire entry into a huge PDF file that we will put into the club library, and there will also be a hard copy of it available to look over at the meeting. Lots of work went into this. Thank you all!

At the last meeting, it was mentioned that the club wearables program that Diane Worth and Gordon Hansen have been working on, will be presented to everyone at this month's meeting. I had the opportunity to preview this program at the Richmond Airport Picnic and I have to say that Diane and Gordon have put together an outstanding package of shirts, pullovers, hats and jackets as well as tote bags, fold up canvas chairs and more with first rate quality throughout! And the prices are the best I've ever encountered in looking at this type of merchandise.

They will be taking orders that night, so bring your bucks (cash or checks) and wear the FAAC proudly!



## Celebrating 40 Years of Intent Listening

Diane K. Fisher

In nature, adjacent animals on the food chain tend to evolve together. As coyotes get sneakier, rabbits get bigger ears. Hearing impaired rabbits die young. Clumsy coyotes starve. So each species pushes the other to "improve."

The technologies pushing robotic space exploration have been like that. Improvements in the supporting communications and data processing infrastructure on the ground (the "ears" of the scientists) have allowed spacecraft to go farther, be smaller and smarter, and send increasingly faint signals back to Earth—and with a fire hose instead of a squirt gun.

Since 1960, improvements in NASA's Deep Space Network (DSN) of radio-wave antennas have made possible the improvements and advances in the robotic spacecraft they support.

"In 1964, when Mariner IV flew past Mars and took a few photographs, the limitation of the communication link meant that it took eight hours to return to Earth a single photograph from the Red Planet. By 1989, when Voyager observed Neptune, the DSN capability had increased so that almost real-time video could be received from the much more distant Planet, Neptune," writes William H. Pickering, Director of JPL from 1954 to 1976, in his Foreword to the book, *Uplink-Downlink: A History of the Deep Space Network, 1957-1997*, by Douglas J. Mudgway.

Mudgway, an engineer from Australia, was involved in the planning and construction of the first 64-m DSN antenna, which began operating in the Mojave Desert in Goldstone, California, in 1966. This antenna, dubbed "Mars," was so successful, that identical 64-m antennas were constructed at the other two DSN complexes in Canberra, Australia, and Madrid, Spain.

As Mudgway noted in remarks made during the recent observance of the Mars antenna's 40 years of service, "In no time at all, the flight projects were competing with radio astronomy, radio science, radar astronomy, SETI [Search for Extraterrestrial Intelligence], geodynamics, and VLBI [Very Long Baseline Interferometry] for time on the antenna . . . It was like a scientific gold rush."

In 1986 began an ambitious upgrade program to improve the antenna's performance even further. Engineering studies had shown that if the antenna's diameter were increased to 70 m and other improvements were made, the antenna's performance could be improved by a factor of 1.6. Thus it was that all three 64-m DSN antennas around the world became 70-m antennas. Improvements continue throughout the years.

"This antenna has played a key role in almost every United States planetary mission since 1966 and quite a few international space missions as well. Together with its twins in Spain and Australia, it has been a key element in asserting America's pre-eminence in scientific exploration of the solar system," remarks Mudgway.

Find out more at <http://deepspace.jpl.nasa.gov/dsn/features/40years.html>. Kids (and grownups) can learn more at [http://spaceplace.nasa.gov/en/kids/phonedrmarc/2003\\_august.shtml](http://spaceplace.nasa.gov/en/kids/phonedrmarc/2003_august.shtml).



*For over 40 years, the "Mars" 70-m Deep Space Network antenna at Goldstone, California, has vigilantly listened for tiny signals from spacecraft that are billions of miles away.*

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## Soaring Fun ... *(continued from page 1)*

me feel at ease. Then he asked how much I weighed (cringe again), and then said that I might have to sit in the rear seat. I thought, no problem, he will now be my air bag (evil grin).

Oren helped me into the plane, and proceeded to strap me in. Inside the plane, there are identical controls and instrument gages in both seats. There were a few gages for altitude, speed, level and something else. Oren started to operate all the controls with his feet, and the joy stick to make sure that I wasn't obstructing anything, sitting there. All clear! Check!

After hooking the sail plane up to the "tow" plane (it looked like something thrown together with an Erector set) we closed the canopy. No backing out now, I thought. The tow plane revved up and we started to take off. It only went about three or four hundred yards before we were off the ground and being towed, onward and upward.



Photo by Dale Ochalek  
*Before release from the tow plane ahead*

As we were ascending, Oren explained about the gages, and what I'd see, though it might as well have been in Greek. In about 10 minutes we got to an altitude of 3000 feet or so. Once we reached that point, Oren warned me that I'd hear a little moaning noise, and then he would release the tow cable and veer to the right, as the tow plane veered left. And so it was; we were on our own.

Up there soaring, it was like taking a nice leisurely stroll through the skies. Looking down, I could see a lot of lakes and wooded areas, and some farms as well. Oren pointed out a lake with some boats, and mentioned that their club members were mutually welcome guests. I thought that was a pretty good trade.



Photo by Dale Ochalek  
*Looking out over Joslyn Lake, just south of the airfield*

I told Oren that Cedar Point rides don't bother me and that if he wanted to "play" I had no problem with it. No sooner did I say that, we started into a nose dive, the earth was coming up fast. Shortly after, he pulled up and then G forces really started to sink in. I could feel my extra weight being pulled as the G forces increased. He then proceeded to bank at a 90-degree angle to the earth with land to my right and nothing but sky to my left. Again the G forces were pretty strong. He asked if I was OK and I said SURE! Keep Going!!!



Photo by Dale Ochalek  
*Banking toward the airfield for a flyover*

I was having a blast, and thought Cedar Point has NOTHING on this ride. After a few more nose dives and 90 degree banks, he decided that if the B-25 could buzz the air field (earlier), so could we. In we come to buzz by, we couldn't come as close as the B-25 because we still had to turn around, go back to prepare for a landing and still have enough height to accomplish this.

*...continued on page 5*

## Soaring Fun ... *(continued from page 4)*

After buzzing the field, we headed back and were ready for landing. The plane seemed kind of high at the time, but we dropped quickly as we approached the field. Then right at the head of the field we came in low and it seemed as if we were picking up speed as the ground raced by. I knew we weren't and it was just the perspective that made it appear as if we were going faster. When the plane touched down (it only has one wheel) the ground was racing by so fast, it was like coming to the end of a big roller coaster ride. It was a little bumpy, but not real bad considering we were landing on a grassy field. Oren pulled the plane to a stop directly on this yellow pad about 8 by 12 feet long.

Perfect Landing.

I thanked Oren very much for the ride and went to greet my girlfriend Rachel. She was glad to see me in one piece, and asked how it was. I told her it was great, of course. Then she surprised me; she wanted a ride, too. This amazed me, since I know her fear of heights and especially planes. So as I went to pay for my ride, I took her to the reservation wagon with me. My ride came to an amount less than advertised – a great deal! I handed the lady some bills and said keep the change; it was worth it. She smiled knowingly.

Luckily for us, there was still enough time for Rachel to try it. It turned out that this was going to be the Grob's last flight of the night and Oren's last time to pilot. This was really good luck on our part because Rachel was very nervous and didn't like the look of some of the other sail planes that looked much older. We asked Oren to "take it easy" on her and to just give her a "stroll in the park," and no acrobatics.

She got the nice stroll, came to a landing. I asked if she kept her eyes open, and she said yes, she had a GREAT time. I was so proud of her for overcoming this fear.

We couldn't stay for the fireworks, and left shortly after the glider rides, so I'll leave the fireworks stories for someone else. But I'd like to personally thank the Soaring Club for putting on a great barbeque, and giving us the opportunity to do something not many get to do. I'd also like to thank Oren for taking it easy on Rachel. She still won't go on the Millennium Force at Cedar Point with me, but at least this is a start.

## More Picnic Fun...

Photos by Dale Ochalek



*Diane Worth explains selections for new FAAC "wearables."*



*A friendly nod from a B-25, flying over from Grand Rapids.*



*Sunset, and time to set up for night-sky viewing.*

## June 22 Meeting Minutes

Ken Anderson

Attendees: 22+

Meeting officially started at 5:30 PM with pizza and pop available 15 minutes earlier. Don Klaser, President, chaired the meeting and led the introductions, and asked for observations, etc.

Ed Halash reported observing IO moon and shadow transit across the face of Jupiter during Astronomy Day at Island Lake State Park with Eric and me. I reported seeing Saturn, Mars, and M44 Beehive all in same view of my 25x100 binoculars. GLAAC has several beginners linked with experts, and Saturday night being great to look at double stars. Gary Strumolo reported using his Coronado PST for solar observing and photography, and the Sun is now his favorite star to observe! Gordon Hansen has a few 2007 Astronomy Magazine calendars left for sale at the \$7 bulk low price. Jon Blum reported also observing a shadow transit on Jupiter. I also reported observing the Leo galaxies, Saturn near M44 Beehive, and solar observing. FAAC officials Don Klaser, Gordon Hansen, and I conducted solar observing during Astronomy Day at the Detroit Science Center. Twenty or more astronomers brought their telescopes to Island Lake to close out a very successful Astronomy Day. Steve Harvath used his Takahashi 140.

Don Klaser began discussion of club business, with the main presentation to take place afterwards (planetarium presentation).

The June newsletter was posted in Yahoo the week before the club meeting. Ken Anderson gave the secretary report, and his May minutes were approved/accepted without correction. Ken also pointed out that perfect attendees for the last 4 months consisted of the club officers, Harold Thomason, Milton French, and near perfect attendees consisted of Tom Jakowski, Preston Crofts, Dennis Saliotte, Bob MacFarland, Steve Harvath, Doug Bauer, Jon Blum, Steve Flessa, Don Sommers, Gary Stahl, and Tony Licata.

The club is seeking someone with good attendance to volunteer to pick up the pop for meetings (Ken will gladly do it until someone volunteers). Gordon Hansen gave the treasurer's report, and we had \$6238 total in the bank, of which \$1627 is committed to GLAAC, with all other bills and parties paid for.

Next, Don Klaser opened the projects/committees/ events portion of the meeting:

Ed Halash reported July 8th will be the Sandhill Soaring/FAAC/Richmond Airfield Picnic and "Rain or Shine" social event starting at 3PM. Solar telescopes, night time observing of Moon, Jupiter, Saturn, and other bright objects. Fireworks, Glider Flying opportunity (~\$60). Bring Table, chairs, and dish to pass. Sandhill Soaring coking and providing hotdogs, hamburgers and pop. Note FAAC previously provided \$300 token of appreciation to Sandhill Soaring to be used however they wanted.

The FAAC scholarship presentation was next. Gordon Hansen, Don Sommers and Bob FitzGerald were on the scholarship committee and selected Jason Klaser, who will be attending the University of Michigan – Michigan State and wants to analyze genes for cancer (and hopefully directly or indirectly find a cure!). Jason was attended by his parents Rosemary and Ed Klaser.

The SIG meeting for July 13 features Gordon Hansen talking about 3-4 arc second scope tracking accuracy for astrophotography.

The FAAC next club meeting on July 27 will be in the Hackett Room of HFCC Health Career Building which seats 42 people. There will be a 3D Astrophotography presentation. Gordon Hansen will purchase some 3D glasses, but bring your own if you have them from videos just in case he runs out.

Outreach award update – July 15th deadline approaching for a \$2500 Astronomy Magazine Outreach Program Award. Dale Ochalek is looking for supporting documents, letters of thanks, photos, and public outreach documentation. We discussed potential uses of the award money (required for the application) such as presentation laptop, audio equipment, advanced technology internet remote observatory, a telescope and/or observatory, portable planetarium (\$18000 new or \$600 rent to use DSC's). The board will discuss in depth at the next board meeting, club members always welcome.

Bob MacFarland gave reminder for next GLAAC event September 29-30, 2006 10th Annual Astronomy on the Beach, and listed the events and features, including NASA guest speaker (TBD

*...continued on page 7*

Meeting Minutes ... (continued from page 6)

- raising \$1,500-\$2,000 to fly in speaker), Sky Tours, Public Invited Beginner Night and Sky Orientation (reservations recommended if you request one-on-one help), with Sales Tables, and park concessions / rest rooms open.

Don Klaser mentioned the FERA summer discount ticket promotion for The Henry Ford, Cedar Point, Kings Island, and the Michigan Renaissance.

Diane Worth is working on club logo apparel on polo shirts and/or sweat shirts. Bring checkbook to the next meeting July27th. Don Klaser had 500 FAAC brochures made.

At 6:30 we walked over to the HFCC planetarium where Mike Bruno presented the non-automated "Spring Sky" show. Ken Anderson helped out, pointing out items of interest like Saturn, Mars, and the Beehive, and other objects. Afterward Mike Bruno discussed the control panel and Ken Anderson reviewed the Spitz A3P planetarium equipment - star ball, geocentric Earth projector, planet projectors, planet analogs, projection array, meridian projector, Ecliptic projector, coordinates projector, and twilight projector.

The meeting was adjourned around 7:30 PM.

Meeting Agenda - July 27

(NOTE! Hackett Room, HFCC, Health Career Bldg.)

(5:30 pm) - Opening/Introductions/Member Observing

New Members & Guests – Diane Worth

Tech Talk: Space, Time and Relativity - Gary Strumolo

Presentation: Distance & Scale – Mike Bruno

Club Business / Secretary/ Treasurer Report

Club Projects / Committees / Member support

- Club Apparel Program - Diane Worth
- Richmond Airport Picnic recap - Ed Halash / all
- Astro-Imaging SIG – Jim Frisbie
- GLAAC Update – Bob MacFarland
- Outreach Award Entry - Update - Dale Ochalek
- DSO Outreach Event - Recap - Don Klaser
- FAAC Hotline - Don Klaser
- Walk-ins

FAAC Calendar of Events 2006

Bob MacFarland

- August** 5 - Beginner's Night - Island Lake Recreational Area
- September** 2 - Beginner's Night - Island Lake  
22-24 - Great Lakes Star Gaze – Gladwin  
29-30 - Astronomy on the Beach - GLAAC
- October** 28 - Beginner's Night - Island Lake

Treasurer's Report

Gordon Hansen

Bank Accounts

Checking	\$	200.39
Savings	\$	3558.05
		-----
<b>TOTAL Bank Accounts</b>	<b>\$</b>	<b>3758.44</b>

Cash Accounts

Cash Account	\$	81.63
		-----
<b>TOTAL Cash Accounts</b>	<b>\$</b>	<b>81.63</b>

Asset Accounts

GLAAC	\$	1626.45
Projector	\$	603.38
Scholarship	\$	168.60
		-----
<b>TOTAL Asset Accounts</b>	<b>\$</b>	<b>2398.43</b>
		-----
<b>OVERALL TOTAL</b>	<b>\$</b>	<b>6238.50</b>

## Items for Sale

**Meade 10" LXD55 Schmidt Newtonian** telescope Autostar guided, German Equatorial mount, "T"- adapter, Super Plossl 26-mm eyepiece, 1.25" and 2" eyepiece holders, battery pack for 8 "D" cell batteries, 25ft. 110v. power cord. Bought in 2002 for \$1200, will sell for \$1000, or possibly trade for another scope.

E-mail inquiries to: eddyelectro@talkamerica.net

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**Coulter 10" Dobsonian** telescope. \$400.  
Contact Bob Stonik, 313-361-4954.

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**8" LX200 'classic' F/10**, low hours, great shape. 2nd owner, new in 2001. Includes all std. plus optional - Scopestuff long Dec. cord, Scopestuff collimation knobs installed, Meade 1812 power adapter, Meade heavy duty Cordura soft case, Kendrick Dew Strap, Homemade counter weight and rail, dew shield, and scope transporter, Telrad base. On display at Rider's Livonia. \$1400.00 OBO

Call Jim: 313-386-6944 day, 313-928-9042 eve.

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**Meade ETX Spotting Scope**, 5 inch, Paragon Plus tripod, 26mm Super Plössl, 9.5mm Orion Epic, 13mm Orion Superwide Lanthanum. Nearly new, must sell. Could sell individually.

Contact Jack Fournier, 248-219-6222

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## Astro Imaging SIG

Jim Frisbie

The next meeting of the Astro Imaging S.I.G. is Thursday, August 10, 5:30pm, Roseneau Rooms A-B at Henry Ford Community College in Dearborn, Administrative Services & Conference Bldg. (the usual FAAC General Meeting room). All Club members and their guests are invited. The topic for the meeting is TBD. If you drive up to the Faculty parking lot gate, it should open, allowing you to park close to the building.

## Sky Calendar

Jim Frisbie

### July

27 Th Moon passes 1.1 degrees north of Mars-PM

### August

2 We First Quarter moon 4:46 AM  
 2 We Moon passes 5 degrees south of Jupiter-PM  
 6 Su Mercury at Greatest Elongation west (19 degrees)  
 9 We Full moon 6:54 AM Sturgeon Moon  
 12 Sa Perseid meteor shower maximum  
 15 Tu Last Quarter moon 9:51 PM  
 21 Mo Moon passes 3 degrees north of Venus-AM  
 22 Tu Moon, Mercury, Venus and Saturn within a 7.5 degrees, dawn  
 23 We New moon 3:10 PM  
 26 Sa Saturn in .5 degree from Venus at dawn  
 29 Tu Moon passes 5 degrees south of Jupiter-PM  
 31 Th Moon 1.3 degrees south of Spica 10:45 PM  
 31 Th First Quarter moon 6:56 PM

*All times in Eastern Daylight Time.*

This information was obtained from the Henry J. Buhl, Jr. Planetarium in Pittsburg, PA.

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## B-25 Flyover Revisited

Dale Ochalek





# Ford Amateur Astronomy Club

## Beginner's Nights - at Island Lake

### These Remaining 2006 Dates:

August 5, September 2, October 28  
from 7:00pm to Midnight

(Arriving at 7pm will allow you to get help, or set up, during daylight)

Do you have a new telescope that you would like to learn to use? Do you want to see samples of what the night sky has to offer (weather permitting)? Consider coming out to Island Lake Recreation Area on Beginner's Night. These nights are dedicated to providing equipment and observing assistance to new astronomers.

*(The events will take place on the date indicated regardless of sky conditions, cloudy or clear. If it is raining, that event will be cancelled.)*

The exact location of the observing site is the "Spring Mill Pond" parking lot and picnic area, at the Island Lake State Recreation Area, on Kensington Road, south of I-96 between South Lyon and Brighton.

For more details on this event, contact John Kirchhoff, c/o Rider's Hobby Shop of Livonia, 734-425-9720, or email [riderslivonia@aol.com](mailto:riderslivonia@aol.com)

*The Ford Amateur Astronomy Club observes at the Island Lake site on Friday and Saturday evenings year round, provided skies are clear. You are welcome to visit the observing site on any weekend, but you must be with a club member if you plan to observe after 10pm.*

Ford Amateur Astronomy Club  
Star Stuff Newsletter  
P.O. Box 7527  
Dearborn MI 48121-7527



# RIDER'S<sup>®</sup>

## HOBBY SHOPS

<b>Store Hours:</b> M-F 11am-8pm SAT 10am-6pm SUN Noon-5pm	<b>Gen. Manager:</b> John Kirchhoff <b>Website:</b> <a href="http://www.riders.com">http://www.riders.com</a>	30991 Five Mile Road Livonia MI 48154 Tele: (734) 425-9720 FAX: (734) 425-2029
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### **New Arrivals from Sky and Telescope !!**

- **Celestial Sampler** - a new book by Sue French, \$24.95  
- 60 deep sky tours for small telescopes
- **Pocket Sky Atlas** - by Roger W Sinnott, \$19.99  
- the best 20 bucks you will ever spend on a star atlas!
- **Double Stars for Small Telescopes** - by Sissy Haas, \$29.95  
- more than 2100 double and multiple stars. Easy to use!

**Say you saw it in "Star Stuff" - and save 10%**